

What is Claimed is

1. A modular personal network comprising:
 - a processor having a memory module;
 - said processor having a wireless transceiver;
 - said processor having a communications interface module to communicate with a remote processor;
 - said processor having a configuration module for supporting a plurality of individual network components (INCs);
 - a plurality of INCs including:
 - (i) a mobile telephone,
 - (ii) an electronic calendar,
 - (iii) an electronic clock,
 - (iv) a display, and
 - (v) an audio output device;
 - said INCs each having a wireless receiver for communicating with the processor,
 - and wherein a user program in the processor controls all the INCs.
2. The network of claim 1, wherein the processor further comprises a single physical module.
3. The network of claim 1, wherein the user program resides in the remote processor and is transmitted to the communications interface module to be stored in the memory module and executed by the processor.
4. The network of claim 1, wherein the processor further comprises a component in a plurality of INCs.
5. A method of controlling a modular personal network comprising:
 - (a) providing a software application that runs on a personal computer,
 - (b) allowing a plug-in to the software application that corresponds to a particular individual network component (INC) in the modular personal network,

- (c) allowing a user to use the plug-in to download software to a controlling INC to control said particular INC, and
- (d) allowing the user to use the plug-in to configure a parameter related to said particular INC.

6. A method of providing security in a modular personal network comprising:

- (a) programming an individual network component (INC) of the modular personal network with a network identifier that is unique to the modular personal network,
- (b) tagging a wireless message sent to the INC with a message network identifier corresponding to the network identifier of the MPN,
- (c) rejecting a received message in the INC if the message network identifier of the received message does not match the programmed network identifier,
- (d) allowing the programmed network identifier to be modified only by an authorized user, and
- (e) not allowing an unauthorized user to retrieve the network identifier from the INC.

7. The method of claim 6 further comprising:

- (a) receiving a message in a component of said modular personal network that was transmitted by a component of a second modular personal network,
 - (b) using the received message to determine a network identifier associated with the second modular personal network, and
 - (c) sending a message from a component of said modular personal network to a component of the second modular personal network using the determined network identifier;
- thereby providing secure communication between said modular personal network and the second modular personal network.

8. A display unit designed to be worn by a user on the radial side of the user's wrist or the dorsal side of the user's hand and to display items selected from the group consisting of text characters, graphics, and video.

9. A display system comprising:

- (a) a plurality of display devices in which a first one of the plurality of display devices differs from a second one of the plurality of display devices, and
- (b) a mount on a user's body that can be reused with any one of the plurality of display devices and that allows said any one of the plurality of display devices to be repositioned in a variety of viewing positions on the mount.

10. A mobile information system designed to be worn by a user comprising a display unit, a control unit, and an audio output device in which the audio output device is not physically connected to the display unit, and wherein the control unit is configured to wirelessly transmit information to be displayed on the display unit and to wirelessly transmit information to be output by the audio output device.

11. A mobile audio output device comprising:

- (a) a wireless receiver for receiving audio information from another device;
- (b) a speaker that outputs the audio information received by the wireless receiver; and
- (c) means for mounting the mobile audio device to a single item of clothing selected from the group consisting of a hat, a headband, and a helmet.

12. A mobile network comprising an input device and a processing device whereby:

- (a) the input device comprises a pressure sensor for accepting input commands from a user;
- (b) the input device further comprises a radio frequency wireless transmitter for sending the input commands to the processing device;
- (c) the processing device comprises a radio frequency wireless receiver for receiving the input commands from the input device,

- (d) the mobile network further comprises means for mounting the input device to an item of clothing worn by the user; and
- (e) the mobile network further comprises means for allowing the user to wear the processing device.

13. A mobile information system designed to be worn by a user comprising a display unit, a control unit, and a user input device in which the user input device is not physically connected to the display unit, and wherein the user input device is configured to wirelessly transmit commands from the user to the control unit and the control unit is configured to wirelessly transmit information to be displayed to the display unit.

14. A method of providing music and audio cues to a user comprising storing the music in a storage device configured to be worn or carried by the user, playing the music for the user using an audio output device worn by the user, providing the audio cues to the user using the audio output device, and automatically pausing the music while the audio cues are provided.

15. A personal data collection system comprising a media recording device configured to be worn or carried by a user, a personal data collection device configured to be worn or carried by the user, a storage device configured to be worn or carried by the user for storing media collected by the media recording device and data collected by the personal data collection device, a base station, and a communications device for sending the media and the data from the storage device to the base station.

16. A method of providing guidance comprising allowing a user to follow a route while wearing or carrying a position monitor, logging the position data measured by the position monitor at intervals while following the route, saving the logged position data, and using the saved data for later guidance of the user while the user is wearing or carrying the position monitor.

17. A method of providing route simulation comprising allowing a user to follow a route while wearing or carrying a position monitor, logging the position data measured by the position monitor at intervals while following the route, saving the logged position data, and using the saved data for controlling a piece of exercise equipment to simulate the route.
18. A mobile position logging system configured to be worn by a user comprising:
- (a) a position monitoring device,
 - (b) a separate input device for creating annotations,
 - (c) a memory for storing position or speed data collected from the position monitoring device and input data collected from the input device, and
 - (d) a communication device for uploading the collected position or speed data and input data from the memory to a personal computer.
19. A method of providing an athletic workout comprising allowing a user to define a set of workout parameters using a workout definition station, downloading the set of workout parameters into a mobile athlete subsystem configured to be worn by an athlete during a workout, wherein the mobile athlete subsystem is configured to use the set of workout parameters during the athlete's workout to control an aspect of the workout, to collect a workout result during the athlete's workout, and to upload the workout result into the workout definition station.
20. A method of controlling an athletic workout of a single activity type comprising allowing a user to divide the workout into a plurality of sections with a plurality of goals, allowing the user to define a parameter to be controlled during one of the plurality of sections, collecting input during the one section, monitoring the parameter during the one section using the collected input, and providing an output based on the monitored parameter and the user definition during the one section.

21. A method of measuring a stride length of a user comprising measuring speed using a position monitor worn by the user, measuring cadence using an accelerometer worn by the user, and calculating the stride length by dividing the speed by the cadence.

22. A method of counting laps while swimming comprising measuring a parameter using an input device worn by the swimmer, measuring a first set of time periods in which the parameter has a first characteristic matching a characteristic typical of swimming, measuring a second set of time periods in which the parameter has a second characteristic matching a characteristic typical of turning in water, and counting laps by counting transitions between instances of time periods in the first set and instances of time periods in the second set.

23. A method of logging a lap swimming workout comprising:

- (a) measuring a parameter using an input device worn by a swimmer,
- (b) evaluating the measured parameter,
- (c) comparing characteristics of the parameter to characteristics of a plurality of swimmer's activities selected from the group consisting of swimming crawl stroke, swimming breaststroke, swimming butterfly, swimming backstroke, kicking, turning, and resting,
- (d) determining the swimmer's activity using the comparison,
- (e) estimating time durations for the activities, and
- (f) providing the estimated time durations to the swimmer.

24. A method of estimating data samples in a mobile athletic data collection and logging system comprising collecting athletic performance data samples using a device worn or carried by an athlete, recognizing that one or more of the data samples are invalid, estimating values for the invalid data samples, and storing or displaying the estimated values along with the collected data samples not recognized as invalid.

25. A method of estimating an athlete's oxygen uptake in a system designed to be worn during an athletic effort comprising measuring a duration of the athletic effort, measuring

a velocity of the athletic effort, and calculating the oxygen uptake based on the duration and the velocity.

26. A method of estimating an athlete's maximum oxygen uptake in a system designed to be worn during an athletic effort comprising measuring a duration of the athletic effort, measuring a velocity of the athletic effort, and calculating the maximum oxygen uptake based on the duration and the velocity.

27. A method of estimating an athlete's lactate threshold in a system designed to be worn during an athletic efforts comprising measuring the athlete's heart rate during a series of progressively more difficult athletic efforts and determining the heart rate corresponding to the athlete's lactate threshold based on the rate of increase of heart rate between the efforts.

28. A method of improving athletic performance comprising measuring a metabolic parameter of a user during an athletic activity, estimating usage or loss of a consumable by the user during the athletic activity based on the measured metabolic parameter, and reminding the user to consume an amount of the consumable when the estimated usage or loss reaches a defined amount.

29. A training system comprising a sensor worn by a user during a training activity, memory to store characteristics of desired movements and outputs from the sensor, a processor to compare the outputs from the sensor to the characteristics of desired movements and to use that comparison to determine incorrect form, and an output device to provide feedback to the user on the incorrect form.

30. A method of monitoring a user using a modular personal network (MPN) comprising providing an individual network component (INC) that comprises a mobile monitor to be worn by the user, using the mobile monitor to measure a metabolic value, using the metabolic value to detect, predict, or estimate the likelihood of a specific medical problem in the user, taking an action to address the medical problem, and allowing an

additional INC not related to the monitoring function to be worn or carried by the user and added to the MPN.

31. A mobile wildlife recognition system configured to be worn or carried by a user comprising a digital camera to capture a wildlife still image, a first memory to store the captured wildlife still image, a second memory to store a library of wildlife still images, a processor to compare the captured wildlife image in the first memory with wildlife still images in the library in the second memory, and a user output device to display the result of the comparison.

32. A portable electronic journal configured to be worn or carried by a user comprising a memory to store journal entries, a user input device selected from the group consisting of a voice input device and a text input device used to create journal entries, a digital camera to create images to store with the journal entries, a clock to tag the journal entries with date and time, a communication device to upload the journal entries to a personal computer, and software to format the journal entries to a common file format.

33. A method of turning off a wireless network of devices comprising:

- (a) receiving a turn-off input command from a user using one of the devices;
- (b) sending a turn-off message using the wireless network from said one of the devices to the other devices in the wireless network;
- (c) ceasing the sending of wireless messages between the devices;
- (d) waiting for a turn-on input command from the user using said one of the devices; and
- (e) sending a turn-on message using the wireless network from said one of the devices to the other devices in the wireless network.

34. A modular personal network comprising:

- a processor having a memory module;
- said processor having a wireless transceiver;

said processor having a communications interface module to communicate with a remote processor;

said processor having a configuration module for supporting a plurality of individual network components (INCs);

a plurality of dispersed INCs that each have a different primary function within the modular personal network, wherein the primary function of each INC is one of a mobile telephone, an appointment notification unit, an electronic clock, a display, and an audio output device ;

said INCs each having a wireless receiver for communicating with the processor, and wherein a user program in the processor controls all the INCs.

35. The network of claim 1 wherein the processor provides central control over all the INCs.